Claims

1. Zn alloy for hot-dip galvannealing steel, characterised in that it contains 0.12 to 0.35 wt.% Al and 0.02 to 0.11 wt.% Cr.

2. Zn alloy for hot-dip galvannealing steel according to claim 1, characterised in that it contains 0.135 to 0.29 wt.% Al and 0.05 to 0.10 wt.% Cr.

3. Zn alloy for hot-dip galvannealing steel according to claims 1 or 2, characterised in that it further only contains Zn and unavoidable impurities.

4. Process for coating steel on an individual hot-dip line, comprising, in either order, the steps of:

- galvanising a first quantity of steel by hot-dipping in a Zn alloy bath;
- galvannealing a second quantity of steel by hot-dipping in the Zn alloy bath and by subjecting the coated steel hereby produced to a thermal treatment in an annealing furnace,

characterised in that the Zn alloy contains Al and 0.05 to 0.10 wt.% Cr.

5. Process for galvannealing dual-phase steel by hot-dipping in a Zn alloy bath, characterised in that the Zn alloy contains 0.12 to 0.35 wt.% Al and 0.02 to 0.11 wt.% Cr.

6. Process of lowering the specific energy consumption of a furnace used for annealing a product after hot-dipping in a Zn alloy bath, by performing either one or both steps of:

- lowering the maximal surface temperature reached by the hot-dipped product in the annealing furnace; or,

- lowering the residence time of the hot-dipped product in the annealing furnace;

whereby at least 0.02 % Cr is added to the Zn alloy bath.